# CITY OF CRAIGMONT

**December 8, 2000**

## State of Idaho
## Department of Environmental Quality

## Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the act. This assessment takes into consideration potential contaminant sources within the source water assessment area, the construction and condition of the wells, the soils, and hydrogeology.

This report, *Source Water Assessment for Craigmont, Idaho*, describes the public drinking water system, delineates the source water assessment area, identifies potential contaminant sources located within the source water assessment area, reviews the construction of the wells, and evaluates the local hydrogeologic conditions. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.** This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important.

The City of Craigmont drinking water system consists of two wells, Well #2-East and Well #3 South. A third well, Well #1 North, is no longer in operation. During the years 1993 through 1997, nitrate levels ranging from 6.1 mg/l to 8.03 mg/l were measured in water samples collected from Well #2-East. Well rehabilitation performed in 1998 on Well#2-East appeared to be successful in eliminating nitrate from the water supply. Numerous samples collected since then have not contained any detectable nitrate. Nitrogen isotope data collected during a ground water study in 1998 indicate that the source of nitrate in shallow wells surrounding the City of Craigmont is primarily due to the use of commercial fertilizer on crops. The dominant agricultural land use supports this hypothesis.

The susceptibility of the City of Craigmont Well #2-East to contamination by volatile organic compounds (VOCs), inorganic chemicals (IOCs), synthetic organic chemicals (SOCs), and microbials at the time of the assessment was MODERATE. The susceptibility of the City of Craigmont Well #3-South to contamination by VOCs, IOCs, and SOCs, at the time of the assessment was MODERATE. The susceptibility of Well #3-South to contamination by microbials was LOW.

For the City of Craigmont, source water protection activities should focus on implementation of practices aimed at preventing releases from facilities within the delineated source water areas. Due to the time involved with the movement of ground water, source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the short term. Source water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission and local Soil Conservation District, the Natural Resources Conservation Service, and the Nez Perce Tribe.

A community with a fully developed source water protection program will incorporate many strategies. For assistance in developing protection strategies please contact your regional Idaho Department of Environmental Quality office or the Idaho Rural Water Association.

# SOURCE WATER ASSESSMENT FOR CRAIGMONT, IDAHO

## Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the susceptibility ranking means.** A map showing the delineated source water assessment area and the inventory of significant potential sources of contamination identified within that area are included in this assessment. A potential contaminant inventory list of acronyms and definitions, and the susceptibility ranking criteria used to develop this assessment, are included in Attachment A.

### Background

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated source water assessment area, sensitivity factors associated with the wells, and the local hydrogeology.

### Level of Accuracy and Purpose of the Assessment

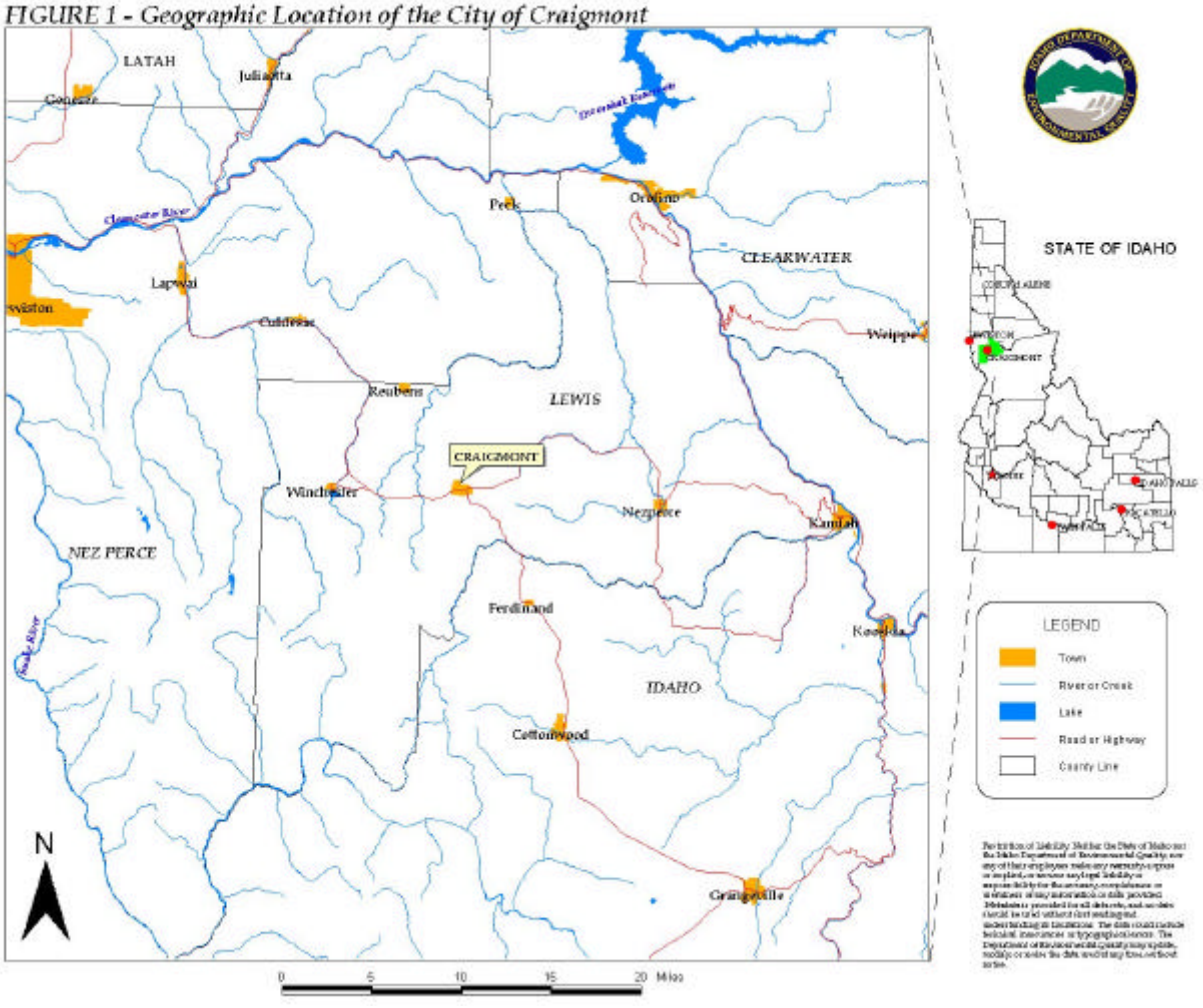
The Idaho Department of Environmental Quality (DEQ) is required by the U.S. Environmental Protection Agency to assess the over 2,900 public water sources in Idaho by May 2003. The resources and time available to accomplish assessments are limited. Therefore, an in-depth, site-specific investigation to identify each significant potential source of contamination for every public water system is not possible. **This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

The ultimate goal of the assessment is to provide data to local communities so they can develop a protection strategy for their drinking water supply system. The DEQ recognizes that pollution prevention activities generally require less time and money to implement than treating a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a source water protection program should be determined by the local community based on its own needs and limitations. Wellhead or source water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

## Section 2. Conducting the Assessment

The City of Craigmont is located in Lewis County within the Nez Perce Tribe 1863 Treaty Boundary (Figure 1). The City of Craigmont is a community of approximately 550 people that provides municipal drinking water and sewer service to its residents. The public water system currently consists of two well sources (Well #2-East and Well #3-South).

*FIGURE 1 - Geographic Location of the City of Craigmont*



## General Description of the Source Water Quality

The City of Craigmont is located within an area that has historically had elevated levels of nitrate. The DEQ conducted a study during 1998 (*A Reconnaissance of Nitrite/Nitrate in Camas Prairie Ground Water* [Bentz, 1998]) evaluating the extent of nitrate contamination on the Camas Prairie. Ground water samples from 53 wells were collected during this regional investigation and analyzed for nitrate. The regional study indicated the ground water in the Craigmont area contained elevated nitrate levels. In anticipation of the source water assessment process, an evaluation of the ground water quality proximate to the City of Craigmont source water assessment area was conducted by DEQ in November 1998. Water samples were collected from three domestic wells and two City of Craigmont wells. The results of the investigation suggest nitrate impacts are limited to the shallow aquifer. The City of Craigmont draws water predominantly from a deeper aquifer that is not impacted by nitrates observed in the shallow aquifer.

The City of Craigmont public water system does not currently appear to have any water quality problems. However, between 1993 and 1997, nitrate levels ranging from 6.1 mg/l to 8.03 mg/l were detected in water samples collected from Well #2-East. Water samples collected in 1998 and 1999 did not contain detectable levels of nitrate. Total coliform bacteria were most recently detected in the public water system in 1998. Total coliform bacteria are common in the environment and are not generally harmful. However, the presence of coliform may indicate the water is contaminated with organisms which cause diarrhea, cramps, nausea, headaches, and fatigue. Follow-up testing did not identify bacteria harmful to human health.

### Defining the Zones of Contribution--Delineation

The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the zone of contribution into time-of-travel zones (zones indicating the number of years necessary for a particle of water to reach a well) for water in the aquifer. The outer boundaries of the time-of-travel zones represent the distance it takes water to travel to a specific well within a specific time period. For example, contaminated water at the outer 3-year time of travel boundary would take 3 years to travel to the well. The source water assessment area for the City of Craigmont is composed of four zones (IA, IB, II, and III). Zone IA, the sanitary setback zone, extends at least 50 feet from the well. Zone IB is the three-year time-of-travel zone; Zone II is the six-year time-of-travel zone: and Zone III is the 10-year time-of-travel zone. The source water assessment area zones are designed so that appropriate levels of management can be applied to contaminant sources within those zones. Typically, more stringent management practices are applied to contaminant sources closer to a well and less stringent management practices are applied to contaminant sources further from a well. Ideally, all contaminant sources within a source water assessment area should be managed to prevent contamination from reaching the water supply well.

DEQ used the Basic method described in the *Idaho Wellhead Protection Plan* (DEQ, 1997) to determine the time-of-travel zones for the City of Craigmont public water supply wells (Figure 2). The data used by DEQ in determining the source water assessment area are available upon request. The predominant geologic feature underlying the Craigmont area is the Columbia River Basalt. Millions of years ago, several basalt flows extruded from vents in what are now Oregon and Washington, resulting in a succession of faulted basalt layers (Castelin, 1976). These basalt flows did not extrude

continuously, but were deposited such that weathering took place between flows. This weathering process produced interbeds of weathered material. The City of Craigmont wells draw water from these interbeds of weathered material.

**Identifying Potential Sources of Contamination**

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. It is important to understand that a release may never occur from a potential source of contamination provided best management practices are used at those facilities. Many potential sources of contamination are regulated at the federal level, state level, or both, to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination, including educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply well.

**Contaminant Source Inventory Process**

The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of ground water contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by DEQ and from available databases.

A two-phased contaminant inventory of the study area was conducted. The first phase involved identifying and documenting potential contaminant sources within the City of Craigmont source water assessment area through the use of computer databases and Geographic Information System maps developed by DEQ. The second or enhanced phase of the contaminant inventory involved conducting an on-the-ground identification of potential sources and validation of sources identified in phase one. In December 2000 Lance Holloway, Idaho Association of Soil Conservation Districts, conducted the enhanced inventory with assistance from the following individuals.

Richard Samsel, Fire Dept. and Highway District.
Bette Stone, Highland School. District.
Dave BoKnecht-Mayor
Roger Riggers-Farmer/City Council member/Soil Conservation District board member

## Section 3. Susceptibility Analyses

The susceptibility of the wells to contamination is ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity of the well, land use characteristics, and potentially significant contaminant sources.

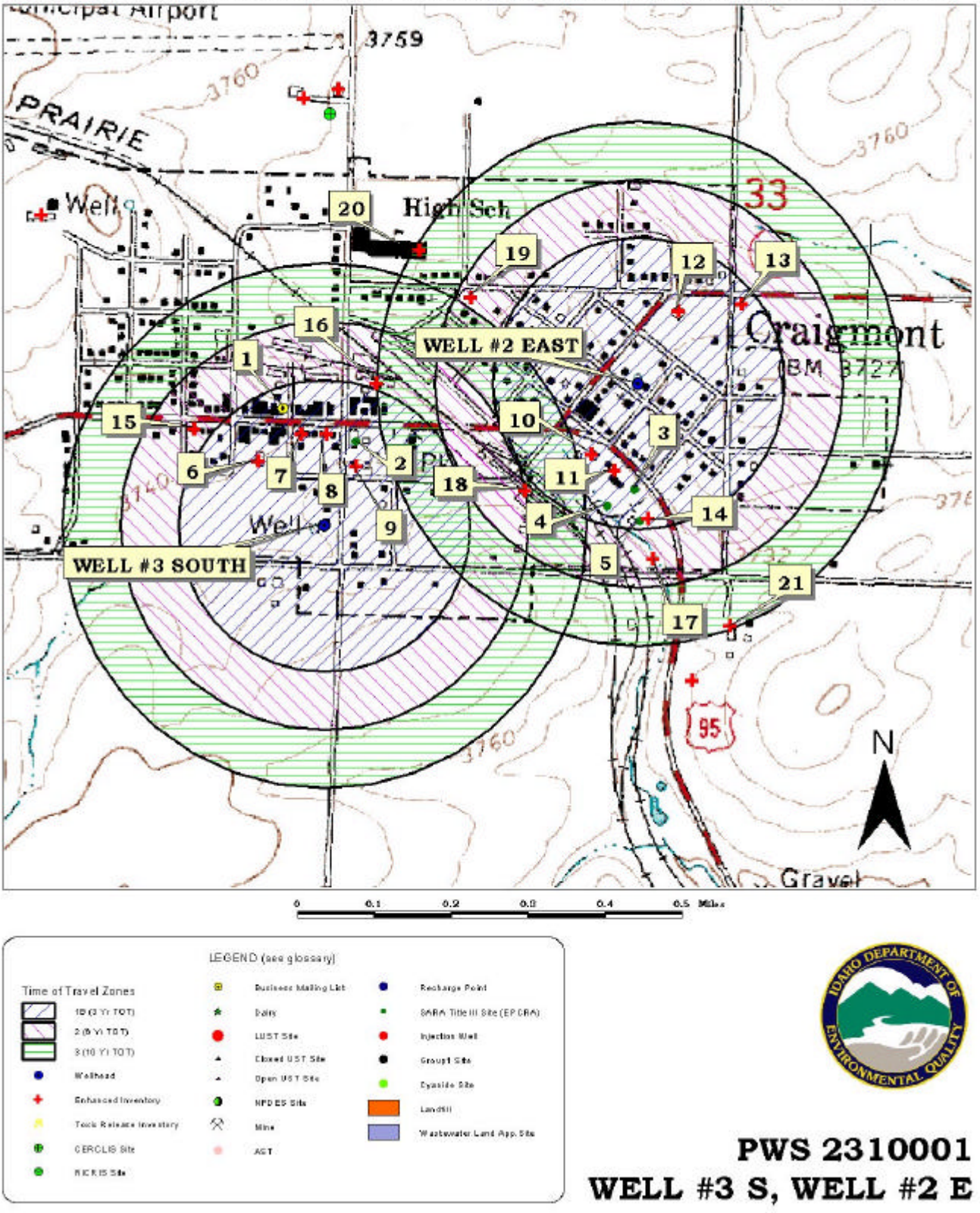
The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. The following summaries describe the rationale for the susceptibility ranking.

### Potential Contaminant Sources and Land Use

Twenty-one potential contaminant sources are located within the delineated source water areas for the City of Craigmont wells (Table 1). These potential contaminant sources include an agricultural supply facility that distributes a wide variety of agricultural chemicals and fuels, service stations, auto repair shops, and highway district facilities (Figure 2). Two abandoned wells are also identified as potential contaminant sources because if not properly sealed, they may act as direct conduits to transport contaminants into the aquifer.

Contaminants of concern are primarily chemicals such as petroleum products, solvents, and degreasers (VOCs), pesticides (SOCs), and commercial nitrogen fertilizers (IOCs). Table 1 lists the potential contaminant sources, the contaminants of concern, information sources, and time-of-travel zones in which they are located.

*FIGURE 2 - CITY OF CRAIGMONT: Delineation Map and Potential Contaminant Source Locations*




**PWS 2310001**
**WELL #3 S, WELL #2 E**

**Table 1. City of Craigmont Potential Contaminant Inventory**

| Map # | Potential Contaminant Source | Potential Contaminants of Concern [1] | Source of Information | TOT[2] Zone Well #2 | TOT[2] Zone Well #3 |
|---|---|---|---|---|---|
| 1 | Automobile parts and supplies (retail) | Petroleum, solvents, miscellaneous chemicals (VOCs) | Database Search | | 0-3 |
| 2 | Farm supplies & gas station | Fertilizers (IOCs), pesticides (SOCs), fuel (VOCs) | Database Search | | 0-3 |
| 3 | Former agricultural chemical distributor | Fertilizers (IOCs) | Database Search | 0-3 | |
| 4 | Former agricultural chemical distributor | Dry fertilizer storage (IOCs) | Database Search | 0-3 | |
| 5 | Agricultural chemical distributor | Fertilizers (IOCs), pesticides (SOCs), fuel (VOCs) | Database Search | 0-3 | |
| 6 | Bus sales and maintenance | Solvents, fuels (VOCs) | Enhanced | | 0-3 |
| 7 | Car wash | Wash water (IOCs, VOC, SOCs) | Enhanced | | 0-3 |
| 8 | Gas station (petroleum storage) | Fuel (VOCs) | Enhanced | | 0-3 |
| 9 | State agency (petroleum storage) | Heating oil tank(VOCs) | Enhanced | | 0-3 |
| 10 | Auto repair shop | Solvents (VOCs) | Enhanced | 0-3 | |
| 11 | Historic gas station | Solvents, fuels (VOCs) | Enhanced | 0-3 | |
| 12 | County highway district facility | Solvents, fuels (VOCs), salt (IOCs), | Enhanced | 0-3 | |
| 13 | State highway district facility | Road salt storage (IOCs) | Enhanced | 0-3 | |
| 14 | Agricultural equipment repair facility | Fertilizers (IOCs), solvents and fuel (VOCs) | Enhanced | 0-3 | |
| 15 | Former gas station/existing convenience store | Solvents, fuels (VOCs), former USTs | Enhanced | | 3-6 |
| 16 | Grain Storage/ seed treatment | Pesticides (SOCs) | Enhanced | 6-10 | 3-6 |
| 17 | Bulk Fuel Facility | Above ground petroleum storage tanks (VOCs) | Enhanced | 3-6 | |
| 18 | Sealed well | Potential conduit to aquifer | Enhanced | 3-6 | 6-10 |
| 19 | Sealed well | Potential conduit to aquifer | Enhanced | 3-6 | |
| 20 | High school | Chemicals (VOCs) and heating oil tank | Enhanced | 6-10 | |
| 21 | Agricultural chemical distributor | Fertilizers (IOCs), pesticides (SOCs), fuel (VOCs) | Enhanced | 6-10 | |

**[1]IOCs = inorganic chemicals, VOCs = volatile organic chemicals, SOCs = synthetic organic chemicals**
**[2]TOT = time-of-travel (in years) for a potential contaminant to reach the well**

## Hydrologic Sensitivity

The hydrologic sensitivity of a well is dependent upon four factors: the surface soil composition, the material in the vadose zone (between the land surface and the water table), the depth to first ground water, and the presence of a 50-foot thick fine-grained zone above the producing zone of the well. Slowly draining soils such as silt and clay are typically are more protective of ground water than coarse-grained soils such as sand and gravel. Similarly, fine-grained sediments in the subsurface and a water depth of more than 300 feet protect the ground water from contamination. The hydrologic sensitivity was moderate for both wells. However, Well #3-South is slightly less susceptible because the well driller's log indicates the depth to first water was greater than 300 feet when it was installed (Table 2). The depth to first water in Well #2-East is not greater than 300 feet since the well reportedly extends to 173 feet.

## Well Construction

The construction of the City of Craigmont public water system wells directly affects the ability of contaminants to influence the well. System construction scores are reduced when information shows that potential contaminants will have a more difficult time reaching the intake of the well. Lower scores imply a system is less vulnerable to contamination. For example, if the well casing and annular seal both extend into a low permeability unit, then the possibility of contamination is reduced and the system construction score goes down. If the highest production interval is more than 100 feet below the water table, then the system is considered to have better buffering capacity. The City of Craigmont drinking water system consists of two wells that extract ground water for domestic and industrial uses. The well system construction score for Well #2-East was moderate while the score for Well #3-South was low. Two of the system construction criteria were different between the wells. The production interval of Well #2-East is not 100 feet below the static water level while the production interval of Well#3-South is more than 100 feet below the static water. Additionally, because no well log was available for Well#2-East it is not known if the casing and annular seal extend to a low permeability unit or if the well is constructed in accordance with Idaho Department of Water Resources Well Construction Standards (1993).

**Table 2. Selected Construction Characteristics of City of Craigmont Wells**

| Well # | Total Depth (ft.) | Screened Interval (ft.) | Depth of Surface Seal (ft.) |
|---|---|---|---|
| 2-East | 173 | unknown | Unknown |
| 3-South | 900 | Open Hole below 60 feet | 60 |

### Susceptibility Summary

The susceptibility analysis indicates that the City of Craigmont wells have MODERATE susceptibilities for IOCs, SOCs, and VOCs. Well #3-South is ranked at the low end of moderate with a scores of 7 and 8, while Well #2-East is at the higher end of moderate with scores of 12 for IOCs, SOCs, and VOCs primarily due to unknown well construction factors. The well construction factors resulted in Well#2-East having a moderate susceptibility to microbial contamination while Well#3-South had a low susceptibility to microbial contamination. The susceptibility scoring ranges are explained in Attachment A.

**Table 3. Summary of City of Craigmont Susceptibility Evaluation**

| | **Susceptibility Scores** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Hydrologic Sensitivity | Contaminant Inventory | | | | System Construction | **Final Susceptibility Ranking** | | | |
| Well | | IOC | VOC | SOC | Microbials | | IOC | VOC | SOC | Microbials |
| 2-East | M | H | M | M | L | M | M | M | M | M |
| 3-South | M | M | M | M | L | L | M | M | M | L |

H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility
IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

## Section 4. Options for Source Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

The information in this assessment can help the community develop a source water protection program tailored to the local source water protection area. A community with a fully-developed source water protection program will incorporate many strategies. For Craigmont, source water protection activities should focus on implementation of practices aimed at preventing releases from facilities within the delineated source water areas. Some of the delineated area is outside the direct jurisdiction of Craigmont. Therefore, partnerships with tribal, state, and local governments and industry groups should be established. Due to the time involved with the movement of ground water, wellhead protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the short term. Source water protection activities for agriculture should be coordinated with the Idaho Department of Agriculture, the Soil Conservation Commission, the local Soil Conservation District, the Natural Resource Conservation Service, and the Nez Perce Tribe.

**Assistance**

Public water suppliers and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments.

| | |
|---|---|
| Lewiston Regional DEQ Office | (208) 799-4370 |
| State DEQ Office in Boise | (208) 372-0502 |

Website: http://www2.state.id.us/deq

Water suppliers serving fewer than 10,000 persons may contact John Bokor, Idaho Rural Water Association, at (208) 743-6142 for assistance with wellhead protection strategies.

Additional assistance may be available from the Idaho Association of Soil Conservation Districts at (208) 338-4321.

## References Cited

Bentz, B., 1998, A Reconnaissance of Nitrite/Nitrate in Camas Prairie Ground Water, Lewis and Idaho County, Idaho Division of Environmental Quality.

Castelin, P.M., 1976, Reconnaissance of the Water Resources of the Clearwater Plateau, Nez Perce, Lewis and Northern Idaho Counties, Idaho, Idaho Department of Water Resources, Water Information Bulletin No. 41.

Idaho Division of Environmental Quality, 1997, Idaho Wellhead Protection Plan.

Idaho Department of Water Resources, 1993. Administrative Rules of the Idaho Water Resources Board: Well Construction Standards Rules. IDAPA 37.03.09.

# POTENTIAL CONTAMINANT INVENTORY
# LIST OF ACRONYMS AND DEFINITIONS

**AST (Aboveground Storage Tanks) –** Sites with aboveground storage tanks.

**Business Mailing List –** This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes.

**CERCLIS –** This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ASuperfund≅ is designed to clean up hazardous waste sites that are on the national priority list.

**Cyanide Site –** DEQ permitted and known historical sites/facilities using cyanide.

**Dairy –** Sites included in the primary contaminant source inventory are those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

**Deep Injection Well –** Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

**Enhanced Inventory** – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the DEQ during the primary contaminant inventory.

**Floodplain –** This is a coverage of the 100-year floodplains.

**Group 1 Sites –** These are sites that show elevated levels of contaminants and are not within the priority one areas.

**Inorganic Priority Area –** Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

**Landfill –** Areas of open and closed municipal and non-municipal landfills.

**LUST (Leaking Underground Storage Tank)** – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

**Mines and Quarries** – Mines and quarries permitted through the Idaho Department of Lands.

**Nitrate Priority Area –** Area where greater than 25% of wells/springs show nitrate values above 5 mg/l.

**NPDES (National Pollutant Discharge Elimination System) –** Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

**Organic Priority Areas –** These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

**Recharge Point –** This includes active, proposed, and possible recharge sites on the Snake River Plain.

**RICRIS –** Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

**SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) –** These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

**Toxic Release Inventory (TRI)** – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

**UST (Underground Storage Tank) –** Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

**Wastewater Land Applications Sites** – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

**Wellheads –** These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

# Attachment A

# City of Craigmont
# Susceptibility Analysis
# Worksheets

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

≥ 13 High Susceptibility

Ground Water Susceptibility Report  Public Water System Name : CRAIGMONT CITY OF  Well# : WELL #2 EAST
Public Water System Number 2310001  9/26/00 11:03:16 AM

| 1. System Construction | | SCORE | | | | |
|---|---|---|---|---|---|---|
| Drill Date | | 1/1/45 | | | | |
| Driller Log Available | | NO | | | | |
| Sanitary Survey (if yes, indicate date of last survey) | | YES | 1994 | | | |
| Well meets IDWR construction standards | | NO | 1 | | | |
| Wellhead and surface seal maintained | | YES | 0 | | | |
| Casing and annular seal extend to low permeability unit | | NO | 2 | | | |
| Highest production 100 feet below static water level | | NO | 1 | | | |
| Well located outside the 100 year flood plain | | YES | 0 | | | |
| | Total System Construction Score | | 4 | | | |
| 2. Hydrologic Sensitivity | | | | | | |
| Soils are poorly to moderately drained | | NO | 2 | | | |
| Vadose zone composed of gravel, fractured rock or unknown | | YES | 1 | | | |
| Depth to first water > 300 feet | | NO | 1 | | | |
| Aquitard present with > 50 feet cumulative thickness | | YES | 0 | | | |
| | Total Hydrologic Score | | 4 | | | |
| 3. Potential Contaminant / Land Use - ZONE 1A | | | IOC Score | VOC Score | SOC Score | Microbial Score |
| Land Use Zone 1A | | URBAN/COMMERCIAL | 2 | 2 | 2 | 2 |
| Farm chemical use high | | NO | 0 | 0 | 0 | |
| IOC, VOC, SOC, or Microbial sources in Zone 1A | | NO | NO | NO | NO | NO |
| | Total Potential Contaminant Source/Land Use Score - Zone 1A | | 2 | 2 | 2 | 2 |
| Potential Contaminant / Land Use - ZONE 1B | | | | | | |
| Contaminant sources present (Number of Sources) | | YES | 4 | 4 | 4 | 0 |
| (Score = # Sources X 2 ) 8 Points Maximum | | | 8 | 8 | 8 | 0 |
| Sources of Class II or III leacheable contaminants or | | YES | 4 | 4 | 4 | |
| 4 Points Maximum | | | 4 | 4 | 4 | |
| Zone 1B contains or intercepts a Group 1 Area | | YES | 2 | 0 | 0 | 0 |
| Land use Zone 1B | 25 to 50% Non-Irrigated Agricultural Land | | 1 | 1 | 1 | 1 |
| | Total Potential Contaminant Source / Land Use Score - Zone 1B | | 15 | 13 | 13 | 1 |
| Potential Contaminant / Land Use - ZONE II | | | | | | |
| Contaminant Sources Present | | YES | 2 | 2 | 2 | |
| Sources of Class II or III leacheable contaminants or | | YES | 1 | 1 | 1 | |
| Land Use Zone II | Greater Than 50% Non-Irrigated Agricultural | | 1 | 1 | 1 | |
| | Potential Contaminant Source / Land Use Score - Zone II | | 4 | 4 | 4 | 0 |
| Potential Contaminant / Land Use - ZONE III | | | | | | |
| Contaminant Source Present | | NO | 0 | 0 | 0 | |
| Sources of Class II or III leacheable contaminants or | | NO | 0 | 0 | 0 | |
| Is there irrigated agricultural lands that occupy > 50% of | | NO | 0 | 0 | 0 | |
| | Total Potential Contaminant Source / Land Use Score - Zone III | | 0 | 0 | 0 | 0 |
| Cumulative Potential Contaminant / Land Use Score | | | 21 | 19 | 19 | 3 |
| 4. Final Susceptibility Source Score | | | 12 | 12 | 12 | 9 |
| 5. Final Well Ranking | | | Moderate | Moderate | Moderate | Moderate |

Ground Water Susceptibility Report  Public Water System Name: CRAIGMONT CITY OF  Well# : WELL #3 SOUTH
Public Water System Number 2310001  9/26/00 11:03:16 AM

| 1. System Construction | | SCORE |
|---|---|---|
| Drill Date | 6/10/58 | |
| Driller Log Available | YES | |
| Sanitary Survey (if yes, indicate date of last survey) | YES | 19940 |
| Well meets IDWR construction standards | NO | 1 |
| Wellhead and surface seal maintained | YES | 0 |
| Casing and annular seal extend to low permeability unit | YES | 0 |
| Highest production 100 feet below static water level | YES | 0 |
| Well located outside the 100 year flood plain | YES | 0 |
| Total System Construction Score | | 1 |

| 2. Hydrologic Sensitivity | | |
|---|---|---|
| Soils are poorly to moderately drained | NO | 2 |
| Vadose zone composed of gravel, fractured rock or unknown | YES | 1 |
| Depth to first water > 300 feet | YES | 0 |
| Aquitard present with > 50 feet cumulative thickness | YES | 0 |
| Total Hydrologic Score | | 3 |

| 3. Potential Contaminant / Land Use - ZONE 1A | | IOC Score | VOC Score | SOC Score | Microbial Score |
|---|---|---|---|---|---|
| Land Use Zone 1A | URBAN/COMMERCIAL | 2 | 2 | 2 | 2 |
| Farm chemical use high | NO | 0 | 0 | 0 | |
| IOC, VOC, SOC, or Microbial sources in Zone 1A | NO | NO | NO | NO | NO |
| Total Potential Contaminant Source/Land Use Score - Zone 1A | | 2 | 2 | 2 | 2 |
| **Potential Contaminant / Land Use - ZONE 1B** | | | | | |
| Contaminant sources present (Number of Sources) | YES | 4 | 4 | 4 | 0 |
| (Score = # Sources X 2 ) 8 Points Maximum | | 8 | 8 | 8 | 0 |
| Sources of Class II or III leacheable contaminants or | YES | 4 | 4 | 4 | |
| 4 Points Maximum | | 4 | 4 | 4 | |
| Zone 1B contains or intercepts a Group 1 Area | YES | 2 | 0 | 0 | 0 |
| Land use Zone 1B | Less Than 25% Agricultural Land | 0 | 0 | 0 | 0 |
| Total Potential Contaminant Source / Land Use Score - Zone 1B | | 14 | 12 | 12 | 0 |
| **Potential Contaminant / Land Use - ZONE II** | | | | | |
| Contaminant Sources Present | YES | 2 | 2 | 2 | |
| Sources of Class II or III leacheable contaminants or | YES | 1 | 1 | 1 | |
| Land Use Zone II | Less than 25% Agricultural Land | 0 | 0 | 0 | |
| Potential Contaminant Source / Land Use Score - Zone II | | 3 | 3 | 3 | 0 |
| **Potential Contaminant / Land Use - ZONE III** | | | | | |
| Contaminant Source Present | NO | 0 | 0 | 0 | |
| Sources of Class II or III leacheable contaminants or | NO | 0 | 0 | 0 | |
| Is there irrigated agricultural lands that occupy > 50% of | NO | 0 | 0 | 0 | |
| Total Potential Contaminant Source / Land Use Score - Zone III | | 0 | 0 | 0 | 0 |
| Cumulative Potential Contaminant / Land Use Score | | 19 | 17 | 17 | 2 |
| 4. Final Susceptibility Source Score | | 8 | 7 | 7 | 5 |
| 5. Final Well Ranking | | Moderate | Moderate | Moderate | Low |